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| EXAMINER | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/564,243 | BARRIAC ET AL. | |
| | Examiner | Art Unit | |
| | GREG A. BORSETTI | 4141 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *03 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/11/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. Claims 1-21 are pending.

### *Information Disclosure Statement*

2. The Information Disclosure Statement (IDS) submitted on 1/11/2006 is not in compliance with the provisions of 37 CFR 1.97.

U.S. Patent Documents should include an extra "0" subsequent the "/" to better indicate the document numbers.

Foreign Patent document with "France Telecom" as the Patentee or Applicant was not included and is not being considered.

Non-Patent Literature Documents were not included and are not being considered.

### *Drawings*

3. The drawings filed on 1/11/2006 are accepted by the examiner.

### *Specification*

4. A substitute specification is required pursuant to 37 CFR 1.125(a) because the filed changes to the specification were not filed in another marked up version as well as a clean version.

A substitute specification must not contain new matter. The substitute specification must be submitted with markings showing all the changes relative to the

immediate prior version of the specification of record. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. An accompanying clean version (without markings) and a statement that the substitute specification contains no new matter must also be supplied. Numbering the paragraphs of the specification of record is not considered a change that must be shown.

***Abstract***

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

***The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words***. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. ***The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided***. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The

disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Additionally, “The sheet or sheets presenting the abstract may not include other parts of the application or other material” MPEP 37 CFR 1.72 (b). For example, references (E32) should be deleted and a narrative form should be adopted.

### *Claim Rejections - 35 USC § 112*

6. Claim 14 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 cites a “means for determining the delay difference…” where it is not understood what is meant by the delay difference. Applicant has defined may different delay values and the term "delay difference" is vague and nondescript as it does not specifically refer to any of the disclosed delay values. Clarification is needed.

### *Claim Rejections - 35 USC § 101*

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-12, 14-21 of the claimed invention are directed to non-statutory subject matter. All of the claims cite the calculation of a processing delay but each claim lacks an output or functional change to satisfy 35 U.S.C. 101. The claims must recite an output or transfer to a function part such that the delay is useful, tangible, and concrete.

Claims 19 and 20 of the claimed invention are directed to non-statutory subject matter. Both claims cite the use of an "information medium". The specification defines the medium as:

> The information medium may be any entity or device capable of storing the program. For example, the medium may include storage means, such as a ROM, for example a CD-ROM or a semiconductor ROM, or magnetic storage means, for example a diskette (floppy disc) or a hard disc. Also, the above medium may be a transmissible medium such as an electrical or optical signal, which may be carried by an electrical or optical cable, by radio waves or by other means; in particular, a program according to the invention may be downloaded via the Internet.

A transmissible medium is non-statutory and not fulfill the requirements of 35 U.S.C. 101. Correction is needed.

### *Claim Rejections - 35 USC § 102*

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-8, 10-12, 14, 16, 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kirla et al. (WO2001045291A1 hereinafter Kirla).

**As per claim 1, Kirla discloses:**

- **obtaining from the received data packets a stream of audio packets containing the speech signal**
- [Kirla, column 5, lines 38-45] discloses "FIG. 1 shows a detailed block diagram of an echo removing device 18 such as an echo canceller or an echo suppressor being integrated into a gateway apparatus GW between a Switched Circuit Network SCN and a Packet Data Network PDN. Such a gateway apparatus typically comprises speech decoding means 11, 11', speech encoding means 12, 12', packetizing means 13, receive jitter buffer means 19, and an echo canceller." The gateway receives data packets containing the speech signals in the de-packetizer 19 which receives the packets and buffers them for decoding.
- **within a predetermined decoding time, decoding the stream of audio packets obtained and creating a first reconstituted speech signal**
- [Kirla, column 5, lines 57-64] discloses "In this case, encoding means a conversion from linear to a-law (.mu.-law), and decoding means a conversion from a-law (.mu.-law) to linear. For the a-law and .mu.-law encoding, reference is made to e.g. document ITU-T G.711. In contrast thereto, if low bit-rate codecs are used, the throughput delay of the gateway apparatus GW caused by speech coding is in a range of 5 to 50 ms." Fig. 1 shows a decoder initially decoding the signal at 11' to create a first reconstituted speech signal. It is

shows in the quotation above that the decoding time is within a predetermined range.

- **duplicating at least a portion of the speech signal reconstituted by the telephony module constituting a second speech signal**
- Kirla discloses in Fig. 1 that there is a decoder 11 that takes in the echo signal which would be a portion (attenuated) version of the speech signal which constitutes a second speech signal.
- **determining the delay difference between the first speech signal and the second speech signal**
- [Kirla, column 6, lines 30-39] discloses "It is noted that the encoding and decoding delays have to be multiplied by two because both the gateway GW and far-end application comprises a similar coding method. The packetizing and receive buffering delays of the far-end application might not be known. Therefore, it is safe to include only the delays of the own gateway apparatus GW. Therein, a delay estimation algorithm (e.g. adaptive filter, cross-correlation) within the echo removing device 18 should cope with packetizing, receive buffering, AD/DA conversions and local loop delays of the far-end application." Kirla shows that there is delay estimated means using correlation between first and second speech signals.
- **calculating the processing delay D3 of the speech signal in the receiver terminal from at least the measured delay difference between said first**

**speech signal and said second speech signal and the predetermined decoding time**

- [Kirla, column 6, lines 18-30] discloses that the delay estimation for the echo estimation means and the coding/decoding delays are all taken in summation to determine the round trip delay. It would be inherent that the processing delay D3 could be calculated from this round trip delay as an intermediary step and specifically calculated using the decoding delay as well as the echo estimation delay and jitter buffer delay.

**As per claim 4, claim 1 is incorporated and Kirla discloses:**

- **the step of decoding within a predetermined decoding time uses a decoding algorithm identical to that used in said telephony module or the decoding time difference whereof relative to the algorithm used in the telephony module is constant and known**
- [Kirla, column 6, lines 30-32] discloses "It is noted that the encoding and decoding delays have to be multiplied by two because both the gateway GW and far-end application comprises a similar coding method." Kirla shows that the coding/decoding algorithms are uniform. It is shown that the algorithm(s) are known in [Kirla, column 5, lines 57-64] where they fall within a known range.

**As per claim 5, claim 1 is incorporated and Kirla discloses:**

- **the processing delay D3 is obtained by summing the determined delay difference between the first and second speech signals and the predetermined decoding time of the first speech signal**
- [Kirla, column 6, lines 18-30] discloses that the delay estimation for the echo estimation means and the coding/decoding delays are all taken in summation to determine the round trip delay. It would be inherent that the processing delay D3 could be calculated from this round trip delay as an intermediary step and specifically calculated using the decoding delay as well as the echo estimation delay and jitter buffer delay.

**As per claim 6, claim 1 is incorporated and Kirla discloses:**

- **said packet switching network is an IP network and the data packets received in the terminal are IP packets**
- [Kirla, column 5, lines 20-22] specifically states "FIG. 2 illustrates an example of how an embodiment of the method according to the present invention could be mapped into the Internet Protocol (IP) hierarchy." Kirla discloses the network hierarchy and how it can be applied to IP networks. It would be inherent that if a packet switching network was used as the embodiment of Kirla, that the gateway would receive IP packets as the data packets.

**As per claim 7, Kirla discloses:**

- **A method of evaluating the end-to-end transmission delay of a speech signal received in a receiver terminal during a voice call to a terminal sending said speech signal over a packet-switched network, the method including a step of evaluating the processing delay D3 of the speech signal in the receiver terminal by a method according to claim 1**
- [Kirla, column 6, lines 18-30] discloses that the delay estimation for the echo estimation means and the coding/decoding delays are all taken in summation to determine the round trip delay. It would be inherent that the end-to-end delay including the processing delay (D3) would be calculated as an intermediary step in determining the round trip delay.

**As per claim 8, claim 7 is incorporated and Kirla discloses:**

- **evaluating the send processing delay D1 of the speech signal**
- Fig .1 of Kirla shows encoder 12 and packetizer 13 which prepare the signal for sending and cause two delays in terms of send processing delay. The combination of the two would denote the delay D1 as shown in the instant application where Kirla teaches an evaluating of the send processing delay.
- **measuring the transmission delay D2 of the speech signal in the network**
- [Kirla, column 6, lines 7-10] discloses "According to the present invention, control messages are used to estimate round-trip delays of data packets sent to a far-end gateway GW, a client or the like and echoed back to the gateway GW." The control messages determine the transmission delay between the two

terminals and can be a number of standard protocols as shown in [Kirla, column 6, lines 4-7].

- **evaluating the end-to-end transmission delay from said send processing delay D1, said transmission delay D2 and said receive processing delay D3**
- [Kirla, column 6, lines 18-29] discloses the breakdown of the delays into the culmination of the round-trip delay. It would be inherent that the round-trip delay would encompass the end-to-end delay because the breakdown in Kirla takes into account the delays (D1, D2, and D3) as such in the instant application. The send processing delays consist of the encoding and packetization delays, the transmission delays consist of the control message delay, and the receive processing delays consist of the decoding and the buffering delays. The overall round-trip effectively doubles the encoding and decoding delays but a simple summation of the delays would provide an end-to-end delay value anticipating the instant application.

**As per claim 10, claim 8 is incorporated and Kirla teaches:**

- **the transmission delay D2 of the speech signal in the network is evaluated using a Ping technique**
- [Kirla, column 8, lines 36-40] discloses "***In FIG. 2 is shown the example if a `Ping` procedure is utilized as the control messages***. Such a Ping procedure is a globally used application within TCP/IP protocol stacks (TCP--

Transfer Control Protocol) to estimate round-trip delay around to a far-end host." The control messages which were shown above to represent the transmission delay (D2) use a Ping technique.

**As per claim 11, claim 8 is incorporated and fails to teach:**

- **the transmission delay D2 of the speech signal in the network is evaluated from sender report information extracted from the packets received**
- [Kirla, column, lines ] discloses "According to the above, the use of control messages within the Internet Protocol is the preferred embodiment of the present invention. Hence, FIGS. 2 and 3 show two examples of how the above described methods can be mapped into the Internet Protocol hierarchy." Figures 2 and 3 are two provided methods for determining the delay of the control messages, which correspond to the delay (D2) of the instant application. [Kirla, column 8, lines 51-55] discloses "In FIG. 3 is shown the example if the Real-Time Protocol RTP and the Real-Time Control Protocol RTCP are used for voice and control data, respectively. ***The round-trip delay estimation can be calculated from the sender and receiver reports of the RTCP***." As shown above, the control message delay can be calculated from the sender and receiver reports of the RTCP.

**As per claim 12, claim 7 is incorporated and Kirla teaches:**

- **the end-to-end transmission delay is evaluated by summing said send processing delay D1, said transmission delay D2 and said receive processing delay D3**
- [Kirla, column 6, lines 18-29] discloses the breakdown of the delays into the culmination of the round-trip delay. It would be inherent that the round-trip delay would encompass the end-to-end delay because the breakdown in Kirla takes into account the delays (D1, D2, and D3) as such in the instant application. The send processing delays consist of the encoding and packetization delays, the transmission delays consist of the control message delay, and the receive processing delays consist of the decoding and the buffering delays. The overall round-trip effectively doubles the encoding and decoding delays but a simple summation of the delays would provide an end-to-end delay value anticipating the instant application.

**As per claim 14,**

- **a network filter module adapted to obtain a stream of audio packets containing the speech signal from the data packets received**
- [Kirla, column 5, lines 42-45] discloses "Such a gateway apparatus typically comprises speech decoding means 11, 11', speech encoding means 12, 12', packetizing means 13, ***receive jitter buffer means 19***, and an echo canceller." Fig 1 of Kirla shows a receive jitter buffer/de-packetizer means 19 that is adapted to obtain a stream of audio packets containing the speech signal from

the received data packets. The depacketizer/jitter buffer receives the audio packets that are returned from the echo, which teaches a stream of audio packets containing the speech signal.

- **a control decoder module having a predetermined decoding time for decoding the stream of audio packets obtained and creating a first reconstituted speech signal**
- [Kirla, column 5, lines 57-64] discloses "In this case, encoding means a conversion from linear to a-law (.mu.-law), and decoding means a conversion from a-law (.mu.-law) to linear. For the a-law and .mu.-law encoding, reference is made to e.g. document ITU-T G.711. In contrast thereto, if low bit-rate codecs are used, the throughput delay of the gateway apparatus GW caused by speech coding is in a range of 5 to 50 ms." Fig. 1 shows a decoder initially decoding the signal at 11' to create a first reconstituted speech signal. It has a predetermined decoding time depending on the codec used as shown by the range above.
- **an audio filter module adapted to duplicate at least a portion of the speech signal reconstituted by the telephony module, said portion of the reconstituted speech signal constituting a second speech signal**
- [Kirla, column 5, lines 42-45] discloses "Such a gateway apparatus typically ***comprises speech decoding means 11***, 11', speech encoding means 12, 12', packetizing means 13, receive jitter buffer means 19, and an echo canceller."

The decoder 11 is adapted to decode the echo data returned which is a duplicated (attenuated) signal portion which constitutes a second speech signal.

- **means for determining the delay difference between the first speech signal and the second speech signal**
- [Kirla, column 5, lines 65-67] discloses "The essential blocks of the gateway apparatus according to the present invention which are depicted in FIG. 1 are echo estimation means 16, ***a delay calculation device 15***..." The delay calculation device as shown in Fig. 1 determines the difference between the first and second signals and provides the delay information (S6) to the shift register so it can adjust the echo canceller/supressor.
- **means for calculating the processing delay D3 of the speech signal in the receiver terminal from at least the measured delay difference between said first speech signal and said second speech signal and the predetermined decoding time.**
- [Kirla, column 6, lines 18-29] discloses the breakdown of the delays into the culmination of the round-trip delay. It would be inherent that the round-trip delay would encompass the end-to-end delay because the breakdown in Kirla takes into account the delays (D1, D2, and D3) as such in the instant application. The send processing delays consist of the encoding and packetization delays, the transmission delays consist of the control message delay, and the receive processing delays consist of the decoding and the buffering delays. The overall round-trip effectively doubles the encoding and decoding delays but a simple

summation of the delays would provide an end-to-end delay value anticipating the instant application. The predetermined coding time is included as a part of the coding/decoding delays which are used to calculate the overall delay between the signals.

**As per claim 16, Kirla teaches:**

- **A device for evaluating the end-to-end transmission delay of a speech signal, adapted to be installed in a receiver terminal equipped with a telephony module to evaluate said transmission delay from data packets received in the receiver terminal during a voice call to a terminal sending said data packets over a packet-switched network, said device comprising means for implementing a method of evaluating the end-to-end transmission delay as claimed in claim 7**
- [Kirla, column, lines ] discloses "This method according to the present invention can be very advantageously modified in that said means for triggering echo removal ***are related to a delay calculating device*** by which said delay calculating device requests from said echo estimation means to perform said signaling of a measurement data unit; and said echo delay of said measurement data unit is replied to said delay calculation device which calculates an estimation of a total round-trip delay of said echo path of a speech, which estimation corresponds to said generated delay information, and said calculation is based on said received echo delay of said measurement data

unit and other delays which are provided to said delay calculation device." Kirla teaches a device that is used in determining a round trip delay for the method as shown in claim 1 of the instant application (shown in the rejection of claim 1). It is inherent that the end-to-end delay must be found as a substep in finding the round-trip delay and thus Kirla anticipates the instant application.

**As per claim 19, Kirla teaches:**

- **A computer program on an information medium, including program instructions adapted to execute a method according to claim 1 if said program is loaded into and executed in an electronic data processing system**
- [Kirla, claim 21] discloses "A computer-readable medium for providing information of an echo path of a speech connection in a Packet Data Network, ***the computer-readable medium being encoded with a computer program, the computer program comprising: program code for requesting delay information via devices for triggering echo removal***, said delay information being obtained by signaling a non-speech measurement data unit to said Packet Data Network via an echo estimation unit and measuring a delay of an echo caused by said non-speech measurement data unit via said echo estimation unit…" Kirla teaches that program instructions are stored on a computer readable medium and are adapted to execute a method of the gateway method as shown throughout the specification which anticipates claim

1 of the instant application. Thus, Kirla teaches claim 19 of the instant application because it anticipates a computer program stored on an information medium to execute the method of claim 1 in the instant application when loaded onto an electronic data processing system.

Claim 20 is rejected under the same principles as claim 19 because Kirla has shown the parallel limitations of claim 19 as described in claim 20 and also where Kirla has further rejected a referenced claim.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 and 15 rejected under 35 U.S.C. 103(a) as being taught by Kirla et al. (WO2001045291A1 hereinafter Kirla) in view of Iancu. (US Patent #6795452).

**As per claim 2, claim 1 is incorporated and Kirla fails to disclose:**

**- the measured delay difference between said first speech signal and said second speech signal is measured by intercorrelation of the envelope signals of said first and second signals**

**Iancu, in analogous art, teaches the above limitation,**

- [Iancu, column 1, lines 22-24] discloses "In addition to matching the appropriate PN codes, it is necessary to track the transmission delay of the components, as it may vary." Fig. 1 shows that prior art has used an intercorrelation of the envelope signals to measure a delay difference.
- Iancu and Kirla are analogous art because both pertain to finding delay for the purposes of improving communication quality. It would be obvious to someone of ordinary skill in the art at the time of the invention to combine Iancu with the Kirla device because Iancu's method offers an improves tracking system which in effect, helps to improve received signal quality by determining when sample packets should be received at the receiving end. Iancu's method would be combined with Kirla's device to reduce error in signal transmission effectively reducing signal echo prior to removal/reduction.

Claim 15 is rejected under the same principles as claim 2 because both claim 2 and claim 15 have been rejected by Kirla and Iancu provides the intercorrelation of the envelope signal to Kirla for both claims.

Claims 3 and 21 rejected under 35 U.S.C. 103(a) as being taught by Kirla et al. (WO2001045291A1 hereinafter Kirla) in view of Fisher. (US Patent #5708704).

**As per claim 3, claim 1 is incorporated and Kirla fails to disclose:**

- **the step of determining the delay difference is preceded by a step of detecting vocal activity in the first and second voice signals, the subsequent steps being executed if the vocal activity detected in the first and second signals is above a predetermined threshold**

**Fisher, in analogous art, teaches the above limitation,**

- [Fisher, column 3, lines 43-48] discloses “First, the delay finder 27 determines the energy level of a subframe of the outgoing prompt message signals stored in the interlaced buffer 21. If that energy level is above a certain threshold, a speech determination is made to determine where in the outgoing prompt message signals the prompt message starts.” Fisher teaches that if a voice activity is detected by an energy level above a threshold, the delay finder is executed to find the delay according to the start point that the voice activity defines.
- Fisher and Kirla are analogous art because both utilize an echo canceller and delay determination. It would be obvious to someone of ordinary skill in the art at the time of the invention to combine Fisher with the Kirla device because “Due to the nature of telephone communications, however, an incoming signal includes not only the user's voiced response to the prompt message but also noise which should be removed or at least attenuated before the incoming signal is further processed. One source of noise is distortion introduced by the communications channel. Another source of the noise included in the incoming signal is one or more reflections or delayed "echoes" of the prompt message.

[Fisher, column 1, lines 29-37]" Kirla provides an enhanced echo rejection device for the voice prompt talkover system of Fisher.

Claim 21 is rejected under the same principles as claim 3 because both claim 3 and claim 21 have been rejected by Kirla and Fisher provides the detection of vocal activity to execute the delay differentiation.

Claims 9 rejected under 35 U.S.C. 103(a) as being taught by Kirla et al. (WO2001045291A1 hereinafter Kirla) in view of Cuomo et al. (US Patent #6272539 hereinafter Cuomo).

**As per claim 9, claim 8 is incorporated and Kirla fails to teach:**

- **the send processing delay D1 of the speech signal is evaluated by consulting a table stored in the receiver terminal containing a predefined maximum value and a predefined minimum value of said delay D1 for each type of speech signal send coder, said predefined values taking into account the payload of the IP packets received**

**Cuomo, in analogous art, teaches the above limitation,**

- [Cuomo, column, lines ] discloses " In this embodiment, ***a predefined set of overall delay indicators may be provided***, and after an estimate of overall delay associated with communications, originated by the application, from the first data processing system to the second data processing system is obtained,

***one of the predefined set of overall delay indicators is selected based on the obtained overall delay estimate***." The obtained overall delay estimate would be directly correlated to the payload of the IP packets received and Cuomo teaches that the estimate is a determinate of which of the predefined values are chosen. It would be obvious to someone of ordinary skill in the art that the maximum and minimum values for the delay's (to any device) would be included in the predefined set. The set would not contain values that are not applicable and it would not only contain values in between the maximum and the minimum because the delay would be incorrect if either the maximum or minimum delay values were applicable.

- Kirla and Cuomo are analogous art because both pertain to finding delay in packet switched environments. It would be obvious to someone of ordinary skill in the art at the time of the invention to combine Cuomo with the Kirla device because "there exists a need for ways to improve the confidence of user's of data communication networks in the reliability of such networks as a media for business communications.[Cuomo, column 2, lines 54-56]" Cuomo provides a visual indication of the delay associated with a given network connection where Kirla provides an echo and delay estimation scheme to reduce interference and improve signal quality. It would be advantageous to provide to users, especially on VoIP over a computer, a visual indication of the delay such that the user may adjust their speech to accommodate the overall delay.

Claims 13,17-18 are rejected under 35 U.S.C. 103(a) as being taught by Kirla et al. (WO2001045291A1 hereinafter Kirla) in view of Shaffer et al. (US Patent #6370163 hereinafter Shaffer).

**As per claim 13, claim 7 is incorporated and Kirla fails to teach:**

- **creating information representing the end-to-end delay values obtained**
- [Kirla, column, lines] discloses "Other advantageous modifications reside in that said delay calculation device monitors a call signaling device and said delay information request is triggered when a call is established by a call setup signaling of said call signaling device; in that said delay request is triggered during the signaling of a call establishment after a voice channel is activated and a delay is replied before an alerting is signaled; in that after said delay information is replied, said delay calculation is performed, and said shift register is adjusted, it is checked whether an echo path model being present in said delay calculation device is reliable, and if not, said echo removing device calls an echo request procedure again; or in that after said checking of reliability, it is checked whether said call is released, and if not, said checking of reliability is repeated." Kirla teaches that the delay is establish prior to call and determined to be reliable or unreliable. That information is gathered into the shift register which adjusts to the difference to correct echoing based upon the round-trip, and inherently the end-to-end, delay.

**Kirla fails to teach,**

- **sending said end-to-end delay information over the network to a collection server adapted to manage end-to-end delay information sent by a set of communication terminals connected to the network**

**Shaffer, in analogous art, teaches the above limitation**

- [Shaffer, column 2, lines 32-35] discloses "The determination of end-to-end transmission delay includes obtaining network topology data from a server device, the data including an end-to-end transmission delay attributed to the network topology." Delay data is taken from a server where it is stored to reference the end-to-end delay as developed by Kirla.
- Shaffer and Kirla are analogous art because both deal with speech transfer over a packet network. It would be obvious to someone of ordinary skill in the art at the time of the invention to combine Shaffer with the Kirla device because the goal of Shaffer is "a system and a method for speech transport over a data network which minimizes end-to-end delay caused by network traffic and network topology between two IP telephony devices. [Shaffer, column 2, lines 9-12]" The delay information collected by Kirla is referenced by Shaffer to reduce traffic in data networks.

**As per claim 17, Kirla teaches:**

- **A device that evaluates the processing delay of speech signal as claimed in claim 14**
- See the rejection of claim 14

**Kirla fails to teach but Shaffer teaches in analogous art,**

- **Telephone terminal equipment on a packet-switched network, in particular an IP telephone or a personal computer that evaluates the processing delay equipped with telephony software**
- [Shaffer, column 3, lines 36-40] discloses "Upon receiving the acknowledgment message, the first communication device is configured to calculate an approximate end-to-end delay by dividing the time interval between transmission of the test packet and receipt of the acknowledgment message in half. In a preferred embodiment, the processing delay introduced by the second communication device prior to transmission of the acknowledgment message is taken into account in calculating the end-to-end delay." Shaffer's system operates on IP telephony [Abstract] and includes a device for measuring the processing delay, which is the second communication device. The processing delay method as in the instant application is provided by Kirla.
- Shaffer and Kirla are analogous art because both deal with speech transfer over a packet network. It would be obvious to someone of ordinary skill in the art at the time of the invention to combine Shaffer with the Kirla device because the goal of Shaffer is "a system and a method for speech transport over a data network which minimizes end-to-end delay caused by network traffic and network topology between two IP telephony devices. [Shaffer, column 2, lines 9-12]" The delay information collected by Kirla is referenced by Shaffer to reduce traffic in data networks.

**As per claim 18, Kirla teaches:**

- **A device that evaluates the end-to-end delay of speech signal as claimed in claim 16**
- See the rejection of claim 16

**Kirla fails to teach but Shaffer teaches in analogous art,**

- **Telephone terminal equipment on a packet-switched network, in particular an IP telephone or a personal computer that evaluates the end-to-end delay equipped with telephony software**
- [Shaffer, column 3, lines 36-40] discloses "Upon receiving the acknowledgment message, the first communication device is configured to calculate an approximate end-to-end delay by dividing the time interval between transmission of the test packet and receipt of the acknowledgment message in half. In a preferred embodiment, the processing delay introduced by the second communication device prior to transmission of the acknowledgment message is taken into account in calculating the end-to-end delay." Shaffer's system operates on IP telephony [Abstract] and includes a device for measuring the processing delay, which is the second communication device. The processing delay method as in the instant application is provided by Kirla.
- Shaffer and Kirla are analogous art because both deal with speech transfer over a packet network. It would be obvious to someone of ordinary skill in the art at the time of the invention to combine Shaffer with the Kirla device because

the goal of Shaffer is "a system and a method for speech transport over a data network which minimizes end-to-end delay caused by network traffic and network topology between two IP telephony devices. [Shaffer, column 2, lines 9-12]" The delay information collected by Kirla is referenced by Shaffer to reduce traffic in data networks.

***Conclusion***

10. Refer to PTO-892, Notice of References Cited for a listing of analogous art.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREG A. BORSETTI whose telephone number is (571)270-3885. The examiner can normally be reached on Monday - Thursday (8am - 5pm Eastern Time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chameli Das can be reached on 571-272-3696. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Greg A. Borsetti/
Examiner, Art Unit 4141

/CHAMELI C. DAS/
Supervisory Patent Examiner, Art Unit 4141